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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,782	09/07/2004	Ichiro Tamura	1907-0217PUSI	6562

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EXAMINER

RU, POWEN

ART UNIT PAPER NUMBER

2615

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/506,782	Applicant(s) TAMURA ET AL.	
	Examiner Powen Ru	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11, 13, and 15-16 is/are rejected.
- 7) ☒ Claim(s) 6, 12 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the initial office action based on the application filed on 9/7/2004 and amended on 9/22/2006. Claims 1-16 are currently pending and have been considered below.

Claim Objections

1. Claims 3-7, 9, 11, 14-16 are objected to because of the following informalities:

Claim 3 is comparing an aperture size (line 1) with possible two aperture sizes (that of the second loudspeakers). The examiner suggests that —an aperture size ... larger than that of each of the second loudspeakers— is a better clause to describe the invention. See Claim 8 for example.

Claims 4, 9, 11, and 14-16 are still not clear after amendment. The applicant should consider to replace “a ratio of a total ... loudspeakers” with —a ratio of a total opening area of the through holes to the first area for the first loudspeaker is larger than the ratio for the second pair of loudspeakers—.

Claim 5 recites “for each second loudspeaker of the second pair of loudspeaker” (last line) which should be changed to —for each of the second pair of loudspeakers—.

Claims 6-7 recite “one of” (last line) which should be changed to —each of— to make the claim clearer.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Gatti et al. (EP 801514 A2).

Claim 1: Gatti discloses an image display device (Fig. 1) comprising:

a main display body (video unit 11) provided with a display portion (screen of 11) for presenting an image,

a first loudspeaker (27) for reproducing sounds of low frequency (col 2 lines 32-33),

a second pair of loudspeakers (22-23) for reproducing sounds of middle and high frequencies (col 2 lines 29-31),

a duct (45) for improving a low frequency sound property of the first loudspeaker (col 3 lines 5-19), and

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a stand (base 10) for supporting the main display body (col 2 lines 4-15), wherein the stand has a portion that is opposite (see Fig. 1) to an outlet (hole 40) of the duct.

Claim 3: Gatti discloses the image display device as in Claim 1; and further discloses the aperture size of the first loudspeaker is larger than that of each of the second loudspeakers (see Fig. 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 5, 7-8, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gatti et al. (EP 801514 A2) in view of Shiota et al. (5,825,903) and Hodsdon et al. (3,989,909).

Claim 2: Gatti discloses the image display device as in Claim 1; and further discloses a housing (support 13 having a bottom 14 and a front wall 17, col 2 lines 6-7, Fig. 1) having the first loudspeaker and the second pair of loudspeakers therein (col 2 lines 28-34, Fig. 2), the housing having a plurality of through holes (grilles 29, 42, and 44, col 2 lines 35-47, Fig. 1-2 and 4) in a first area corresponding to an aperture size of each loudspeaker (Fig. 1 and 4);

but does not disclose blind holes in a second area surrounding the first area.

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However, Shiota discloses a housing (grille 1, col 2 lines 42-52, Fig. 1-2) having a plurality of blind holes (dummy bores 21) surrounding the through holes (through holes 11) and Hodsdon discloses another housing (grill 10, col 3 lines 61-64, Fig. 1 and 6) having the similar structure (grooves between bars in the surrounding area as the blind holes; openings 16 as the through holes; noting that the "hole" is defined as an opening into or through something in Merriam-Webster Dictionary).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to

apply Shiota's teaching to design the grilles for Gatti's two outward facing loudspeakers (22 and 23, col 2 lines 35-40) and

apply Hodsdon's grille for Gatti's low frequency loudspeaker (27, col 2 lines 41-47).

One would have been motivated to do so in order to attain excellent integral design matching the whole image display device by arranging Shiota's indistinguishable blind holes around the aperture of each outward facing loudspeaker (col 1 line 62 – col 2 line 19). While the outlook of the low frequency loudspeaker is not a concern, Hodsdon's heat radiation capacity (col 3 lines 13-17) would be desirable as a low frequency loudspeaker is known to generate excessive heat, which may damage the device.

The combination thus teaches

the housing having a plurality of blind holes in a second area surrounding the first area (i.e., Shiota's dummy bores 21 or Hodsdon's grooves), wherein

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the second area for the first loudspeaker is different in peripheral shape and/or size from the second area for each of the second pair of loudspeakers (as Gatti's low frequency loudspeaker 27 has larger aperture size, the corresponding surrounding area is therefore different from that of any of the side loudspeakers 22 and 23).

Claim 5: Gatti discloses an image display device (Fig. 1) comprising:

a main display body (video unit 11) provided with a display portion (screen of 11) for presenting an image,

a first loudspeaker (27) for reproducing sounds of low frequency (col 2 lines 32-33),

a second pair of loudspeakers (22-23) for reproducing sounds of middle and high frequencies (col 2 lines 29-31),

a duct (45) for improving a low frequency sound property of the first loudspeaker (col 3 lines 5-19), and

a stand (base 10) for supporting the main display body (col 2 lines 4-15),

a housing (support 13, col 2 lines 6-7, Fig. 1) having the first loudspeaker and the second pair of loudspeakers, wherein the housing has

a plurality of through holes formed in a first area corresponding to an aperture of each of the loudspeakers (grilles 29, 42, and 44, col 2 lines 35-47, Fig. 1-2 and 4);

and the combination of Gatti, Shiota, and Hodsdon further teaches

a plurality of blind holes formed in a second area surrounding the first area (i.e., Shiota's dummy bores 21 or Hodsdon's grooves), and

the second area for the first loudspeaker is different in peripheral shape and/or size from the second area for each of the second pair of loudspeakers (as Gatti's low frequency loudspeaker 27 has larger aperture size, the corresponding surrounding area is therefore different from that of any of the side loudspeakers 22 and 23).

See the preceding argument with respect to Claim 2.

Claim 7: Gatti, Shiota, and Hodsdon disclose the image display device as in Claim 5; and Gatti further discloses that the first loudspeaker and the second pair of loudspeakers are mounted on the stand, with the first loudspeaker placed at a center and one of the second loudspeakers arranged respectively on left and right sides of the first loudspeaker (Fig. 1).

Claim 8: Gatti, Shiota, and Hodsdon disclose the image display device as in Claim 5; and Gatti further discloses the aperture size of the first loudspeaker is larger than that of each of the second pair of loudspeakers (see Fig. 2).

Claim 10: Gatti, Shiota, and Hodsdon disclose the image display device as in Claim 2; and Gatti further discloses the aperture size of the first loudspeaker is larger than that of each of the second loudspeakers (see Fig. 2).

Claim 13: Gatti, Shiota, and Hodsdon disclose the image display device as in Claim 7; and Gatti further discloses the aperture size of the first loudspeaker is larger than that of each of the second pair of loudspeakers (see Fig. 2).

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6. Claims 4, 9, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gatti et al. (EP 801514 A2) in view of Shiota et al. (5,825,903) and Hodsdon et al. (3,989,909), and further in view of Hayashi (JP 4-4493).

Claim 4: Gatti, Shiota, and Hodsdon disclose the image display device as in Claim 2; but neither reference explicitly teaches the ratio of the through holes to the first area.

However, Hayashi teaches that a large hole (5, Fig. 1a) formed in the vicinity of a speaker improves the sound producing quality (translation of "Abstract") and, if the opening is divided into a number of holes (e.g., 6, Fig. 1b), the opening ratio must be larger than 0.5 (translation of "Embodiment").

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the idea of differentiating the area ratio in consideration of the balance between low frequency sound and middle/high frequency sound. One would have been motivated to choose a larger opening ratio for Gatti low frequency loudspeaker to boost its sound producing capacity as it is disadvantageously located in the bottom of the device (col 2 lines 41-47).

Claim 9: Gatti, Shiota, and Hodsdon disclose the image display device as in Claim 5; the combination with Hayashi further teaches the ratio of a total opening area of the through holes to the first area for the first loudspeaker is larger than the ratio for the second loudspeakers. See the preceding argument with respect to Claim 4.

Claim 11: Gatti discloses the image display device as in Claim 3; and further discloses

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a housing (support 13, col 2 lines 6-7, Fig. 1) having the first loudspeaker and the second pair of loudspeakers therein, the housing has

a plurality of through holes formed in a first area corresponding to an aperture of each of the loudspeakers (grilles 29, 42, and 44, col 2 lines 35-47, Fig. 1-2 and 4);

and the combination of Gatti, Shiota, Hodsdon, and Hayashi further teaches a plurality of blind holes formed in a second area surrounding the first area, wherein

the ratio of a total area of the through holes to the first area for the first loudspeaker is larger than the ratio for the second pair of loudspeakers.

See the preceding argument with respect to Claim 2 and 4.

Claim 15: Gatti, Shiota, and Hodsdon disclose the image display device as in Claim 7; the combination with Hayashi further teaches the ratio of a total opening area of the through holes to the first area for the first loudspeaker is larger than the ratio for the second loudspeakers. See the preceding argument with respect to Claim 4.

Claim 16: Gatti, Shiota, and Hodsdon disclose the image display device as in Claim 8; the combination with Hayashi further teaches the ratio of a total opening area of the through holes to the first area for the first loudspeaker is larger than the ratio for the second loudspeakers. See the preceding argument with respect to Claim 4.

Allowable Subject Matter

7. Claims 6, 12, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

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limitations of the base claim and any intervening claims. None of prior art teaches that the first and second loudspeakers are provided in the main display body in combination with all limitations in Claim 5.

Response to Arguments

8. Applicant's arguments with respect to Claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chicoine (4,919,227) discloses a tamper resistant speaker grille for intercom module and Rumreich et al. (5,005,201) discloses an apparatus for improvement of stereophonic sound.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Powen Ru whose telephone number is 571-270-1050. The examiner can normally be reached on Monday-Friday 7:30am-4:00pm EST/EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7654. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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